

Application Serial No: 10/518,136
Responsive to the final Office Action mailed on: April 7, 2008

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IN THE CLAIMSAmendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-2. (Cancelled)

3. (Currently Amended) A ~~fluorometer system~~ for detecting intensity of fluorescence generated from a substance that is excited by ~~light emitted from a light source~~, comprising:

a single light source emitting light having one wavelength;
a fluorometer, comprising:

n (n is an integer of not less than 2) narrow-band-pass filters for transmitting light in different limited wavelength regions of the fluorescence, and n light-receiving portions having one-to-one correspondence with the n narrow-band-pass filters,

wherein an intensity P1 of fluorescence transmitted through a first narrow-band-pass filter is detected by a first light-receiving portion, and

wherein fluorescence reflected from an (n-1)-th narrow-band-pass filter is allowed to enter an n-th narrow-band-pass filter, and an intensity Pn of fluorescence transmitted through the n-th narrow-band-pass filter is detected by an n-th light-receiving portion, and

wherein a relative ratio or a difference between the intensities P1, P2...,Pn of the fluorescence detected respectively by the n light-receiving portions is determined to detect a wavelength width of a spectrum of the fluorescence.

4. (Cancelled)

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5. (Withdrawn) A fluorometer for detecting intensity of fluorescence generated from a substance that is excited by light emitted from a light source, comprising:

n (n is an integer of not less than 2) narrow-band reflection-type notch filters for reflecting light in different limited wavelength regions of the fluorescence, and

n light-receiving portions having one-to-one correspondence with the n narrow-band reflection-type notch filters,

wherein an intensity P1 of fluorescence reflected from a first narrow-band reflection-type notch filter is detected by a first light-receiving portion, and

wherein fluorescence transmitted through an (n-1)-th narrow-band reflection-type notch filter is allowed to enter an n-th narrow-band reflection-type notch filter, and an intensity Pn of fluorescence reflected from the n-th narrow-band reflection-type notch filter is detected by an n-th light-receiving portion.

6. (Withdrawn) The fluorometer according to claim 5, wherein the narrow-band reflection-type notch filter comprises a pair of glass substrates and a photopolymer arranged between the pair of glass substrates, and a periodic change in refractive index of the photopolymer occurs in its thickness direction.

7. (Withdrawn) The fluorometer according to claim 5, wherein a relative ratio or a difference between the intensities P1, P2, ..., Pn of the fluorescence detected respectively by the n light-receiving portions is determined.

Claims 8-11. (Cancelled)

12. (Currently Amended) The fluorometer system according to claim 3, wherein the light source is a light-emitting diode.

13. (Currently Amended) The fluorometer system according to claim 3, wherein the light source is a wavelength-variable semiconductor laser.

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14. (Currently Amended) The fluorometer-system according to claim 3, wherein a rare-earth element is added to the substance.
15. (Currently Amended) The fluorometer-system according to claim 3, wherein a wavelength width of a spectrum of the fluorescence generated from the substance is detected by comparing the detected intensities P₁, P₂, ..., P_n of the fluorescence.
16. (Withdrawn) The fluorometer according to claim 5, wherein the light source is a light-emitting diode.
17. (Withdrawn) The fluorometer according to claim 5, wherein the light source is a wavelength-variable semiconductor laser.
18. (Withdrawn) The fluorometer according to claim 5, wherein a rare-earth element is added to the substance.
19. (Withdrawn) The fluorometer according to claim 5, wherein a wavelength width of a spectrum of the fluorescence generated from the substance is detected by comparing the detected intensities P₁, P₂, ..., P_n of the fluorescence.
20. (Currently Amended) The fluorometer-system according to claim 3, wherein differences between the wavelength width of the spectrum of the fluorescence are distinguished with one or more substances with different fluorescence spectra.